

Quarter Mile Math Level 1

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.4 Developing, testing and explaining conjectures about properties of whole numbers, and commonly used fractions and decimals (for example, $\frac{1}{3}$, $\frac{3}{4}$, 0.5, 0.75).

Substrand **Titles that Address the Substrand**

(Gr. K) describe the concept of zero

Quarter Mile Math Level 1

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.5 Using number sense to estimate and justify the reasonableness of solutions to problems involving whole numbers, and commonly used fractions and decimals (for example, $\frac{1}{3}$, $\frac{3}{4}$, 0.5, 0.75).

Substrand **Titles that Address the Substrand**

(Gr. K) estimate a reasonable quantity for a given number of objects less than 20

Quarter Mile Math Level 1

(Gr. K) describe a relationship between two sets of quantities with more, less, or

Quarter Mile Math Level 1

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving

Strand: 6.4 Constructing, using, and explaining procedures to compute and estimate with whole numbers.

Substrand **Titles that Address the Substrand**

(Gr. K) add and subtract whole numbers by combining and separating objects

Quarter Mile Math Level 1

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.1 Demonstrating conceptual meanings for the four basic arithmetic operations of addition, subtraction, multiplication, and division.

Substrand **Titles that Address the Substrand**

(Gr. K) add and subtract whole numbers by combining and separating objects

Quarter Mile Math Level 1

Subject: MATH

Standard: Algebra And Functions

Strand: 1.0 Students Model, Represent, And Interpret Number Relationships To Create And Solve Problems Involving Addition And Subtraction

Substrand Titles that Address the Substrand

(Gr. 2) 1.2 Relate problem situations to number sentences involving addition and subtraction.
Quarter Mile Math Level 1

(Gr. K) draw pictures to form sets of up to ten items
Quarter Mile Math Level 1

Grades 1 - 1

Subject: MATH

Standard: Mathematical Reasoning

Strand: 3.0 Students Note Connections Between One Problem And Another.

Substrand Titles that Address the Substrand

(Gr. 2) 3.0 Students note connections between one problem and another.
Quarter Mile Math Level 1

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.1 Demonstrating meanings for whole numbers, commonly-used fractions and decimals (for example, $\frac{1}{3}$, $\frac{3}{4}$, 0.5, 0.75), and representing equivalent forms of the same number through the use of physical models, drawings, calculators, and computers.

Substrand Titles that Address the Substrand

(Gr. 1) using objects and pictures, represent whole numbers from 0 to 100 in a variety of ways
Quarter Mile Math Level 1

(Gr. 1) using objects, demonstrate the meanings of equal, less than, and greater than with the whole numbers 0 to 100
Quarter Mile Math Level 1

(Gr. 1) apply equalities using the '=' symbol
Quarter Mile Math Level 1

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.2 Reading and writing whole numbers and knowing place-value concepts and numeration through their relationships to counting, ordering, and grouping.

Substrand Titles that Address the Substrand

(Gr. 1) read and write numerals from 0 to 100 in meaningful contexts
Quarter Mile Math Level 1

(Gr. 1) read the number words for zero to ten
Quarter Mile Math Level 1

(Gr. 1) group objects by ones and tens
Quarter Mile Math Level 1

(Gr. 1) order according to place value (for example, given 9 ones and 2 tens, the student can write the number 29; given the number 29 the student can show 2 tens and 9 ones)

Quarter Mile Math Level 1

(Gr. 1) write one-and two-digit whole numbers in expanded form (for example, $29 = 20 + 9$)

Quarter Mile Math Level 1

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.3 Using numbers to count, to measure, to label, and to indicate location.

Substrand Titles that Address the Substrand

(Gr. 1) count from 1 to 20 by 2's

Quarter Mile Math Level 1

(Gr. 1) count from 1 to 100 by 1's, 5's, and 10's

Quarter Mile Math Level 1

(Gr. 1) sequence selected whole numbers from 0 to 100

Quarter Mile Math Level 1

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.4 Developing, testing and explaining conjectures about properties of whole numbers, and commonly used fractions and decimals (for example, $1/3$, $3/4$, 0.5, 0.75).

Substrand Titles that Address the Substrand

(Gr. 1) verify the addition and subtraction properties of zero with whole numbers

Quarter Mile Math Level 1

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.5 Using number sense to estimate and justify the reasonableness of solutions to problems involving whole numbers, and commonly used fractions and decimals (for example, $1/3$, $3/4$, 0.5, 0.75).

Substrand Titles that Address the Substrand

(Gr. 1) estimate a reasonable quantity for a given number of objects from 0 to 100

Quarter Mile Math Level 1

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving

Strand: 6.1 Demonstrating conceptual meanings for the four basic arithmetic operations of addition, subtraction, multiplication, and division.

Substrand Titles that Address the Substrand

(Gr. 1) demonstrate the operations of addition and subtraction of whole numbers with concrete materials

Quarter Mile Math Level 1

(Gr. 1) link the operations of addition and subtraction, and equality with mathematical terms (for example, add, subtract and equal) and mathematical symbols (for example, +, , =)

Quarter Mile Math Level 1

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving

Strand: 6.4 Constructing, using, and explaining procedures to compute and estimate with whole numbers.

Substrand

Titles that Address the Substrand

(Gr. 1) link the operations of addition and subtraction, and equality with mathematical terms (for example, add, subtract and equal) and mathematical symbols (for example, +, , =)

Quarter Mile Math Level 1

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.3 Demonstrating understanding of and proficiency with basic addition, subtraction, multiplication, and division facts without the use of a calculator.

Substrand

Titles that Address the Substrand

(Gr. 1) demonstrate understanding of basic addition sums to 20 and subtraction differences of 10

Quarter Mile Math Level 1

Subject: MATH

Standard: Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 2.2 Describing patterns and other relationships using tables, graphs, and open sentences.

Substrand

Titles that Address the Substrand

(Gr. 1) continue the pattern given in a table of data using numbers and/or concrete materials

Quarter Mile Math Level 1

Grades 2 – 2

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.1 Demonstrating meanings for whole numbers, commonly-used fractions and decimals (for example, $\frac{1}{3}$, $\frac{3}{4}$, 0.5, 0.75), and representing equivalent forms of the same number through the use of physical models, drawings, calculators, and computers.

Substrand

Titles that Address the Substrand

(Gr. 2) apply equalities and inequalities with whole numbers from 0 to 1,000 using the symbols =, , <, >;

Quarter Mile Math Level 1

Subject: MATH

(Gr. 2) estimate sums and differences first by rounding to the nearest ten prior to performing the operation, and then using the estimate to determine the reasonableness of the solution

Quarter Mile Math Level 1

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.3 Demonstrating understanding of and proficiency with basic addition, subtraction, multiplication, and division facts without the use of a calculator.

Substrand Titles that Address the Substrand

(Gr. 2) demonstrate understanding of basic addition and subtraction facts

Quarter Mile Math Level 1

(Gr. 2) demonstrate automatic recall of basic addition and subtraction facts

Quarter Mile Math Level 1

(Gr. 2) use sums on an addition facts table to locate all addends for a particular sum (for example, $7 = 0 + 7$, $7 = 1 + 6$, . . .)

Quarter Mile Math Level 1

Grades 3 - 3

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.2 Reading and writing whole numbers and knowing place-value concepts and numeration through their relationships to counting, ordering, and grouping.

Substrand Titles that Address the Substrand

(Gr. 3) read and write numerals from 0 to 10,000 in meaningful contexts

Quarter Mile Math Level 1

(Gr. 3) read and write the number words for selected numbers from zero to one thousand

Quarter Mile Math Level 1

(Gr. 3) order according to place value (for example, given 9 ones, 5 tens, 4 hundreds, and 7 thousands, the student can write the number 7,459; given the number 7,459, the student can show 7 thousands, 4 hundreds, 5 tens, and 9 ones)

Quarter Mile Math Level 1

(Gr. 3) identify place value through ten thousands (for example, in 86,243, '6' is in the thousands place)

Quarter Mile Math Level 1

(Gr. 3) write four-digit numbers in expanded form (for example, $7,459 = 7,000 + 400 + 50 + 9$)

Quarter Mile Math Level 1

Grades 5 - 5

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.3 Using numbers to count, to measure, to label, and to indicate location.

Strand: 6.4 Constructing, using, and explaining procedures to compute and estimate with whole numbers.

Substrand Titles that Address the Substrand

(Gr. 3) use estimation techniques such as front-end rounding, rounding, and compatible numbers (numbers whose sum is 10, 100, 1,000..) before performing operations

Quarter Mile Math Level 1

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.3 Demonstrating understanding of and proficiency with basic addition, subtraction, multiplication, and division facts without the use of a calculator.

Substrand Titles that Address the Substrand

(Gr. 3) demonstrate understanding of basic multiplication and division facts of 1's, 2's, 3's, 5's, and 10's

Quarter Mile Math Level 1

(Gr. 3) demonstrate automatic recall of basic multiplication facts of 1's, 2's, 3's, 5's, and 10's

Quarter Mile Math Level 1

Subject: MATH

Standard: Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 2.1 Reproducing, extending, creating, and describing patterns and sequences using a variety of materials (for example, beans, toothpicks, pattern blocks, calculators, unifix cubes, colored tiles).

Substrand Titles that Address the Substrand

(Gr. 3) reproduce, extend, create, and describe patterns, such as in common fractions, geometric shapes, money, measurement, addition, subtraction, and multiplication facts

Quarter Mile Math Level 1

Subject: MATH

Standard: Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 2.3 Recognizing when a pattern exists and using that information to solve a problem.

Substrand Titles that Address the Substrand

(Gr. 3) identify a rule using addition or subtraction and solve a problem using the rule

Quarter Mile Math Level 1

Subject: MATH

Standard: Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 2.4 Observing and explaining how a change in one quantity can produce a change in another (for example, the relationship between the number of bicycles and the numbers of wheels).

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving

Strand: 6.4 Constructing, using, and explaining procedures to compute and estimate with whole numbers.

Substrand Titles that Address the Substrand

(Gr. 4) use estimation techniques such as front-end rounding, rounding, compatible numbers (numbers whose sum is 10, 100, 1,000...) and clustering (for example, $27 + 28 + 30 + 31$ equals approximately $4 \times 30 = 120$) before performing operations

Quarter Mile Math Level 2

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.2 Adding and subtracting commonly used fractions and decimals using physical models (for example, $1/3$, $3/4$, 0.5, 0.75).

Substrand Titles that Address the Substrand

(Gr. 4) add and subtract decimals to the one-hundredths

Quarter Mile Math Level 2

(Gr. 4) compute the total cost of items to \$10.00

Quarter Mile Math Level 2

Subject: MATH

Standard: Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 2.3 Recognizing when a pattern exists and using that information to solve a problem.

Substrand Titles that Address the Substrand

(Gr. 4) identify a rule using addition, subtraction, or multiplication, and solve a problem using the rule

Grades 5 - 5

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.2 Reading, writing, and ordering integers, rational numbers, and common irrational numbers such as $\sqrt{2}$ and $\sqrt{5}$ and i .

Substrand Titles that Address the Substrand

(Gr. 5) compare commonly-used proper fractions and terminating decimals using the symbols =, , <, >

Quarter Mile Math Level 2

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.6 Using number sense to estimate and justify the reasonableness of solutions to problems involving integers, rational numbers, and common irrational numbers such as $\sqrt{2}$, $\sqrt{5}$, and i .

Strand: 2.1 Representing, describing, and analyzing patterns and relationships using tables graphs, verbal rules, and standard algebraic notation.

Substrand Titles that Address the Substrand

(Gr. 5) represent, describe, and analyze patterns for relationships involving whole numbers and common proper fractions
Quarter Mile Math Level 2

Subject: MATH

Standard: Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 2.5 Solving simple linear equations in problem-solving situations using a variety of methods (informal, formal and graphical) and a variety of tools (physical materials, calculators and computers).

Substrand Titles that Address the Substrand

(Gr. 5) solve problems involving linear relationships in whole numbers
Quarter Mile Math Level 2

Subject: MATH

Standard: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning and processes used in solving these problems.

Strand: 3.2 Displaying and using measures of central tendency, such as mean, median, and mode, and measures of variability, such as range and quartiles.

Substrand Titles that Address the Substrand

(Gr. 5) informally distinguish between mean, median, and mode
Quarter Mile Math Level 2

Grades 6 – 6

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.1 Demonstrating meanings for integers, rational numbers, percents, exponents, square roots, and pi (!) using physical materials and technology in problem-solving situations.

Substrand Titles that Address the Substrand

(Gr. 6) identify subsets of integers, including counting and whole numbers
Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6) demonstrate the equivalence of commonly-used fractions, decimals, and percents
Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6) compare positive fractions and decimals using the symbols =, , <, >
Quarter Mile Math Level 2
Quarter Mile Math Level 3

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.3 Applying number theory concepts (for example, primes, factors, multiples) to represent numbers in various ways.

Substrand **Titles that Address the Substrand**

(Gr. 6) determine the greatest common factor and least common multiple of a pair of whole numbers

Quarter Mile Math Level 2

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.5 Developing, testing, and explaining conjectures about properties of integers and rational numbers.

Substrand **Titles that Address the Substrand**

(Gr. 6) demonstrate multiplication inverses of positive rational numbers (for example, $1/9 \cdot 9 = 1$)

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6) demonstrate that division by zero is undefined

Quarter Mile Math Level 2

Quarter Mile Math Level 3

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.6 Using number sense to estimate and justify the reasonableness of solutions to problems involving integers, rational numbers, and common irrational numbers such as $\sqrt{2}$, $\sqrt{5}$, and π .

Substrand **Titles that Address the Substrand**

(Gr. 6) estimate, using appropriate techniques, determine, and, then, justify the reasonableness of solutions to problems involving whole numbers and sums and differences of commonly-used fractions and decimals

Quarter Mile Math Level 2

Quarter Mile Math Level 3

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving

Strand: 6.1 Using models to explain how ratios, proportions, and percents can be used to solve real-world problems.

Substrand **Titles that Address the Substrand**

(Gr. 6) demonstrate the equivalence of fractions, decimals, and percents

Quarter Mile Math Level 2

Quarter Mile Math Level 3

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving

Strand: 6.3 Developing, applying and explaining a variety of different estimation strategies in problem-solving situations, and explaining why an estimate may be acceptable in place of an exact answer.

Substrand Titles that Address the Substrand

(Gr. 4) add and subtract decimals to the one-hundredths
Quarter Mile Math Level 2

(Gr. 4) compute the total cost of items to \$10.00
Quarter Mile Math Level 2

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.2 Adding and subtracting commonly used fractions and decimals using physical models (for example, $1/3$, $3/4$, 0.5, 0.75).

Substrand Titles that Address the Substrand

(Gr. 6) use estimation techniques before performing operations
Quarter Mile Math Level 2
Quarter Mile Math Level 3

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.2 Constructing, using, and explaining procedures to compute and estimate with whole numbers, fractions, decimals, and integers.

Substrand Titles that Address the Substrand

(Gr. 6) demonstrate order of operations including exponents with whole numbers
Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6) choose the appropriate representation of the remainder in a division problem
Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6) demonstrate equivalencies of mixed numerals and improper fractions
Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6) simplify fractions
Quarter Mile Math Level 2

Subject: MATH

Standard: Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 2.5 Solving simple linear equations in problem-solving situations using a variety of methods (informal, formal and graphical) and a variety of tools (physical materials, calculators and computers).

Substrand **Titles that Address the Substrand**

(Gr. 6) solve problems involving linear relationships in positive rational numbers

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6) solve simple linear equations with whole number coefficients by informal methods using manipulatives, tables, graphs, or technology

Quarter Mile Math Level 3

Subject: MATH

Standard: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning and processes used in solving these problems.

Strand: 3.2 Displaying and using measures of central tendency, such as mean, median, and mode, and measures of variability, such as range and quartiles.

Substrand **Titles that Address the Substrand**

(Gr. 4) add and subtract decimals to the one-hundredths

Quarter Mile Math Level 2

(Gr. 4) compute the total cost of items to \$10.00

Quarter Mile Math Level 2

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.2 Adding and subtracting commonly used fractions and decimals using physical models (for example, $1/3$, $3/4$, 0.5, 0.75).

Substrand **Titles that Address the Substrand**

(Gr. 6) formally distinguish between mean, median, and mode

Quarter Mile Math Level 2

Grades 7 - 7

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 6.2 Adding and subtracting commonly used fractions and decimals using physical models (for example, $1/3$, $3/4$, 0.5, 0.75).

Substrand **Titles that Address the Substrand**

(Gr. 7) identify subsets of rational numbers, including counting and whole numbers and integers

Quarter Mile Math Level 2

(Gr. 7) demonstrate the equivalence of positive fractions, decimals, and percents

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.5 Developing, testing, and explaining conjectures about properties of integers and rational numbers.

Substrand **Titles that Address the Substrand**

(Gr. 7) demonstrate properties for integers

Quarter Mile Math Level 3

(Gr. 7) demonstrate the distributive property of multiplication over addition for whole numbers

Quarter Mile Math Level 3

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.6 Using number sense to estimate and justify the reasonableness of solutions to problems involving integers, rational numbers, and common irrational numbers such as $\sqrt{2}$, $\sqrt{5}$, and $\sqrt{3}$.

Substrand **Titles that Address the Substrand**

(Gr. 7) estimate, using appropriate techniques, determine, and, then, justify the reasonableness of solutions to problems involving positive rational numbers

Quarter Mile Math Level 2

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving

Strand: 6.1 Using models to explain how ratios, proportions, and percents can be used to solve real-world problems.

Substrand **Titles that Address the Substrand**

(Gr. 7) demonstrate equivalence of fractions, decimals, and percents using proportions

Quarter Mile Math Level 2

Quarter Mile Math Level 3

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving

Strand: 6.3 Developing, applying and explaining a variety of different estimation strategies in problem-solving situations, and explaining why an estimate may be acceptable in place of an exact answer.

Substrand **Titles that Address the Substrand**

(Gr. 7) use estimation techniques before performing operations

Quarter Mile Math Level 3

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.2 Constructing, using, and explaining procedures to compute and estimate with whole numbers, fractions, decimals, and integers.

Substrand Titles that Address the Substrand

(Gr. 7) demonstrate order of operations with positive rational numbers and integers

Quarter Mile Math Level 3

(Gr. 7) choose the appropriate representation of the remainder in a division problem

Quarter Mile Math Level 3

(Gr. 7) demonstrate the inverse relationship of multiplication and division of decimals

Quarter Mile Math Level 3

(Gr. 7) demonstrate the meaning of the four basic operations of integers

Quarter Mile Math Level 3

(Gr. 7) demonstrate the inverse relationship of addition and subtraction of integers

Quarter Mile Math Level 3

(Gr. 7) demonstrate the inverse relationship of multiplication and division of integers

Quarter Mile Math Level 3

(Gr. 7) demonstrate multiplication of integers as repeated addition

Quarter Mile Math Level 3

Subject: MATH

Standard: Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 2.1 Representing, describing, and analyzing patterns and relationships using tables graphs, verbal rules, and standard algebraic notation.

Substrand Titles that Address the Substrand

(Gr. 7) represent, describe, and analyze patterns with positive rational numbers and integers

Quarter Mile Math Level 3

(Gr. 7) identify the algebraic terms 'expression', 'equation', 'term', 'variable', 'coefficient', and 'constant'

Quarter Mile Math Level 3

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.2 Adding and subtracting commonly used fractions and decimals using physical models (for example, $\frac{1}{3}$, $\frac{3}{4}$, 0.5, 0.75).

Substrand Titles that Address the Substrand

(Gr. 4) add and subtract decimals to the one-hundredths

Quarter Mile Math Level 2

(Gr. 4) compute the total cost of items to \$10.00

Quarter Mile Math Level 2

Subject: MATH

Standard: Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 2.5 Solving simple linear equations in problem-solving situations using a variety of methods (informal, formal and graphical) and a variety of tools (physical materials, calculators and computers).

Substrand **Titles that Address the Substrand**

(Gr. 7) using formal methods, solve one-step linear equations involving integers

Quarter Mile Math Level 3

(Gr. 7) solve linear equations with variables and constants on both sides of the equation by informal methods using manipulatives, tables, graphs, or technology

Quarter Mile Math Level 3

Subject: MATH

Standard: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problem.

Strand: 6.2 Adding and subtracting commonly used fractions and decimals using physical models (for example, $\frac{1}{3}$, $\frac{3}{4}$, 0.5, 0.75).

Substrand **Titles that Address the Substrand**

(Gr. 4) add and subtract decimals to the one-hundredths

Quarter Mile Math Level 2

(Gr. 4) compute the total cost of items to \$10.00

Quarter Mile Math Level 2

Grades 8 - 8

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.1 Demonstrating meanings for integers, rational numbers, percents, exponents, square roots, and pi (!) using physical materials and technology in problem-solving situations.

Substrand **Titles that Address the Substrand**

(Gr. 8) demonstrate the equivalence of fractions, terminating decimals, and percents of positive and negative rational numbers

Quarter Mile Math Level 3

Subject: MATH

Standard: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Strand: 1.6 Using number sense to estimate and justify the reasonableness of solutions to problems involving integers, rational numbers, and common irrational numbers such as $\sqrt{2}$, $\sqrt{5}$, and π .

